ATTORNEY DOCKET NUMBER M70660

WE CLAIM:

1. An improved field emission display device, comprising:

a transparent anode;

phosphor material deposited on said anode; and

binder material covering said anode and phosphor material, whereby shedding of said phosphor material is substantially eliminated.

2. An improved field emission display device according to claim 1 wherein said binder material is conductive.

3. An improved field emission display device according to claim 1 wherein said binder material is semiconductive.

4. An improved field emission display device according to claim 1 wherein said binder material is selected from the group including: tin(II) 2-ethylhexanoate, tin (IV) isopropoxide, tin (II) oxalate, titanium (IV) ethoxide, zinc 2,4-pentane dionate, zinc acetate, zinc oxalate indium oxalate, cadmium oxalate,

5. An improved field emission display device according to claim 1 wherein said binder material is selected from the group including: poly(propylene carbonate), poly(propylene carbonate) and poly(ethylene Carbonate) sold by PAC Polymers Inc. of Greenville, DE as QPAC-40 Emulsion, QPAC-40 amd QPAC-25, respectively.

6. An improved field emission display device according to claim 1 wherein said binder material is selected from the group including: polyvinyl alcohol, potassium silicate, and ammonium silicate.

7. An improved field emission display device according to claim 1 wherein the glass screen is coated with transparent conducting film selected from the group including: indium tin oxide (ITO), zinc oxide (ZnO), tin oxide (SnO_2) doped with antimony (Sb), cadmium oxide (CdO), and cadmium tin oxide (cadmium stannate) Cd_2SnO_4.

8. An improved field emission display device according to claim 1 wherein the binder material is an organometallic compound selected from the group including: cadmium (Cd), titanium (Ti), zinc (Zn), tin (Sn), indium (In), antimony (Sb), tungsten (W), niobium (Nb), which form conductive and/or semiconductive oxides when heated.

9. An improved field emission display device according to claim 1 wherein said binder material is transparent.

10. A method for forming an improved field emission display device, comprising the steps of:

providing a transparent anode;

depositing phosphor material on said anode; and

applying binder material to said anode and phosphor material, whereby the phosphor material is bound together and to said anode so that shedding of said phosphor material is substantially eliminated.

11. A method according to claim 10 wherein said binder material is conductive.

12. A method according to claim 10 wherein said binder material is semiconductive.

13. A method according to claim 10 wherein said binder material is selected from the group including: tin(II) 2-ethylhexanoate, tin (IV) isopropoxide, tin (II) oxalate, titanium (IV) ethoxide, zinc 2,4-pentane dionate, zinc acetate, and zinc oxalate.

14. A method according to claim 10 wherein said binder material is selected from the group including: poly(propylene carbonate), poly(propylene carbonate) and poly(ethylene Carbonate) sold by PAC Polymers Inc. of Greenville, DE as QPAC-40 Emulsion, QPAC-40 and QPAC-25, respectively.

15. A method according to claim 10 wherein said binder material is selected from the group including: polyvinyl alcohol, potassium silicate, and ammonium silicate.

16. A method according to claim 10 wherein the glass screen is coated with transparent conducting film selected from the group including: indium tin

oxide (ITO), zinc oxide (ZnO), tin oxide (SnO_2) doped with antimony (Sb), cadmium oxide (CdO), and cadmium tin oxide (Cadmium stannate) Cd_2SnO_4.

17. A method according to claim 10 wherein the binder material is an organometallic compound selected from the group including: cadmium (Cd), titanium (Ti), zinc (Zn), tin (Sn), indium (In), antimony (Sb), tungsten (W), niobium (Nb), further comprising the step of heating said binder material to form conductive and/or semiconductive oxides.

18. A method according to claim 10 wherein said binder material is transparent.

19. A method according to claim 10 wherein said binder material is heated to remove any organics and leave behind a conducting or semiconducting oxide which binds the phosphor particles to each other and to the glass screen.